

SYRINGES AND METHODS OF SYRINGE MANUFACTURING

ABSTRACT

A syringe for holding fluids susceptible to void formation when frozen and thawed before use. The interior surface of the syringe sidewall may be roughened, which serves to prevent or significantly reduce the incidence of void formation in the fluid. The required level of surface roughening for counteracting void formation may be reduced by increasing the sidewall flexibility. Alternatively, the flexibility of the syringe sidewall may operate over certain thickness ranges to prevent or significantly reduce void formation in the fluid without intentionally roughening the interior surface.